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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,684

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Akira Takayasu

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EXAMINER

PHILLIPS, FORREST M

ART UNIT

PAPER NUMBER

2832

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/567,684	TAKAYASU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	FORREST M. PHILLIPS	2832	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 February 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 10-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/04/09, 11/05/08, 01/22/09</u> .                            | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1,16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (JP2003082568) in view of Enohara (JP2003049351).

With respect to claim 1 Tanaka discloses a sound absorbing material wherein (a) a non-woven fabric with a mass per unit area of 150 to 800 g/m<sup>2</sup> and having a bulk density and (b) a surface material, and (b) is a spun bonded non-woven fabric or a wet-laid non-woven staple fabric (see abstract).

Tanaka does not disclose the bulk density of 0.01 to 0.2 g/cm<sup>3</sup>, wherein the surface material has an air permeability of not more than 50 cc/cm<sup>2</sup>/sec according to JISL-1096.

Enohara discloses a sound absorbing material having a bulk density of 0.01 to 0.2 g/cm<sup>3</sup> (as calculated from the area density and the thickness described) and an air permeability of not more than 50 cc/cm<sup>2</sup>/sec and wherein the nonwoven fabric is a needle punched nonwoven fabric (refer to paragraph 0025 in English translation).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Enohara to use an acoustic material with such mass

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limitations and air flow resistance with the laminate of Tanaka to have a sound absorbing material with excellent sound reduction and a light weight.

With respect to claim 16 Tanaka as modified discloses the invention as claimed except wherein the number of bonding points of the nonwoven fabric and the surface material is not more than 30 points/ square cm and the ratio of the total surface area of the bonding points of the non bonding points is not more than 30%.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to select such boning parameters, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With respect to claim 20 Tanaka as modified discloses wherein the sound absorbing material is a multilayer structure comprising at least one or more layers of each of the non-woven fabric and the surface material wherein the both layers are united (see abstract).

With respect to claim 21 Enohara expressly discloses the use of the material as a vehicle interior or exterior material.

With respect to claims 22-23 Examiner considers it would have been obvious to use the material for a lawn mower or a breaker. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

2. Claims 2-7, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (JP2003082568) in view of Enohara (JP2003049351) as applied to claim 1 above, and further in view of Smith (US5766745) and Fottinger (US5279878).

With respect to claim 2 Tanaka as modified discloses the invention as claimed except wherein the non-woven fabric (a) is a fabric in which a thermoplastic staple fiber and a heat resistant staple fiber with an LOI value of not less than 25 are intertwisted.

Smith discloses wherein the non-woven fabric is a fabric in which thermoplastic staple fiber and a heat resistant staple fiber with an LOI value are intertwined (See Column 5 lines 15-25).

Fottinger discloses that LOI values of not less than 25 are desirable in a flame barrier (Column 1 lines 30-35).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Smith to have the fibers of the claimed materials combined together by intertwisting with the teachings of Fottinger to have the LOI values such as to prevent the spread of fire with the sound absorber of Tanaka as modified to provide a sound absorber which would prevent the spread of fire and enhance safety.

With respect to claim 3 Smith discloses wherein the weight ratio of the thermoplastic fiber and the heat resistant staple fiber is in a range of 95:5 to 55:45 (abstract, described as 90:10).

With respect to claim 4 Smith further discloses wherein the ratio is in a range of 85:15 to 55:45 (Column 5 lines 25 to 40).

With respect to claim 5 Smith further discloses wherein the thermoplastic staple fiber is at least one kind of staple fiber selected from the group consisting of polyester, polypropylene and nylon (Column 5 lines 15-25).

With respect to claim 6 Smith further discloses wherein the heat resistant staple fiber is at least one kind of staple fiber selected from the claimed group (Column 5 lines 15-25).

With respect to claim 7 Smith further discloses wherein the thermoplastic staple fiber is polyester, and the heat resistant staple fiber is an aramid staple fiber (Column 5 lines 15-25).

With respect to claim 14 Tanaka as modified discloses the invention as claimed except wherein the surface material has a dust generation number of not more than 500 particles/0.1 cubic feet of particles with a diameter of not less than 0.3 microns measured by the tumbling method according to JIS b-9923 6.2(1.2).

Smith is concerned with the important factor of dust as discloses in Column 1 lines 60-63 and as such, one of ordinary skill in the art would have found it obvious to select such a working range of dust production as it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

3. Claim 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (JP2003082568) in view of Enohara (JP2003049351) as applied to claim 1 above, and further in view of Bair (US4957794), Smith (US5766745) and Fottinger (US5279878).

With respect to claims 10-13 Tanaka as modified discloses the invention as claimed except wherein the surface material is a wet laid nonwoven staple fabric, and wherein the wet-laid non-woven fabric is comprised of a heat resistant aramid staple fiber with an LOI value of not less than 25 and a silicate material, namely mica.

It is known from Bair (Column 4 lines 37-63) that aramid fibers can be mixed with other fibers and wet laid.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Bair to use wet laying production methods with aramid fibers for the non-woven of Tanaka as modified as this is a well known technique for producing non-woven materials.

Smith discloses the use of a silicate material in the construction of a nonwoven material (Column 6 lines 45-48).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Smith to use silicate material with the non-woven of Tanaka to further enhance flame resistance.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select mica as the silicate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Fottinger discloses that materials considered to be flame resistant generally have an LOI of greater than 25.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka(JP2003082568) in view of Enohara (JP2003049351) as applied to claim1 above, and further in view of Sano (JP2002-182655).

With respect to claim 15 Tanaka as modified discloses the invention as claimed except wherein the nonwoven fabric and the surface material are comprised of the same kind of synthetic fiber.

Sano discloses (abstract) an acoustic absorber having a surface material and a base material are the same kind of polymeric fiber.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Sano to have the surface material and the base material be the same kind of fiber with the absorber of Smith as modified to allow for ease of bonding between the two layers.

Sano is relied on only to demonstrate that the manufacture of the non-woven laminates is known to use a plurality of layers made of the same material is known in the art.

5. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (JP2003082568) in view of Enohara (JP2003049351) as applied to claim1 above, and further in view of Haussling (US5068001) and Noxon (US5035298).

Tanaka as modified discloses the invention as claimed except for the nonwoven fabricated into a three dimensional shape and has the surface material on both sides.



Hausling discloses an acoustic laminate structured such that a non-woven material has a surface material on both sides thereof and is formed into a three dimensional structure having complex curves (see figure 2).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Hausling to have the non-woven covered with the surface material on both sides to enhance the material's ability to hold a three dimensional shape (Column 1 line 60- Column 2 line 5).

Noxon discloses (abstract) the use of three dimensional shapes in sound absorbing panels, including cylinders.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Noxon to use three dimensional sound absorbers with the sound absorbing material of Tanaka as modified to provide greater efficiency of sound absorption in a three dimensional space (Column 2 lines 15-20).

While the three dimension shape shown is that of a column or cylinder it would have been obvious to one of ordinary skill in the art to select any three dimensional shape.

### ***Response to Arguments***

Applicant's arguments filed 02/04/09 have been fully considered but they are not persuasive. Applicant argues that Enohara teaches away from the use of a needle punched nonwoven in paragraph 0009. citing "...in the case of a nonwoven fabric having a low mass per unit area (less than about 1000 g/m<sup>2</sup>) there is a possibility to cause problems regarding maintenance of strength and shape (thickness)."

While Enohara admits to the possibility of problems in maintenance of strength and shape in paragraph 0009, Enohara further discloses the use of a needle punched nonwoven (paragraph 0026), and teaches there is no specific limitation on the material as long as strength and shape can be maintained (0008).

Enohara does not preclude the use of a needle punched nonwoven material by pointing out a possibility.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FORREST M. PHILLIPS whose telephone number is (571)272-9020. The examiner can normally be reached on Monday through Friday 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 57127221990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/F. M. P./ 5/30/2009  
Examiner, Art Unit 2832

/Jeffrey Donels/  
Primary Examiner, Art Unit 2832